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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,179	09/30/2003	Toshitaka Mori	243399US0X	1247
22850	7590	06/21/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MACCHIAROLO, PETER J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,179

Applicant(s)

MORI ET AL.

Examiner

Peter J. Macchiarolo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 12-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species II in the reply filed on 06/08/2005 is acknowledged. The traversal is on the ground(s) that both species include a substrate, an anode, an organic layer, a conductive layer and cathode layer, have a close relationship, and therefore claims 1-20 should be appropriate for examination. This is not found persuasive because species I includes a barrier conductive layer formed by a vacuum film forming method in which oxygen is not introduced in a film forming step, while species II instead has a electron transport protective layer having optical transparency containing an alkali metal and/or an alkali earth metal in a electron transporting organic material. These two different layers would require divergent searches that would not overlap and would be a serious burden on the Examiner. Therefore the requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 06/08/2005.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 12, the limitation, “the electron transport protective layer containing an alkali metal and/or an alkali earth metal in a electron transporting organic material,” is not clear. It cannot be discerned if the electron transport protective layer contains only one alkali metal or the same alkali metal is in an electron transporting organic material, or if the electron transport protective layer contains two alkali metals, both being in the organic material. For the purpose of examination, the Examiner reads, “the electron transport protective layer containing an alkali metal.” Claim 13 suffers from the same problem and is treated the same as claim 12. The remaining claims are rejected due to their dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo et al (USPN 6391482: “Matsuo”).

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7. Regarding claim 12, Matsuo shows in figure 8, an organic EL image display apparatus comprising at least a substrate (11) and an anode layer (12); organic layer (17 and 13), first cathode layer (15), electron transport protective layer (16), and second cathode layer (14) successively disposed on the substrate, the electron transport protective layer containing an alkali metal.¹

8. Matsuo is silent to the cathode layer, electron transport protective layer, or second cathode layer having optical transparency.

9. However, having a transparent cathode and subsequent transparent layers known in the art to allow light to be transmitted through the cathode. Furthermore, it would have been obvious to one having ordinary skill in the art that the time the invention was made to use transparent layers, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

10. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Matsuo having transparent layers so generated light can effectively pass out of the device through the cathode.

11. Regarding claims 13 and 14, Matsuo discloses the second cathode layer comprises the alkali metal, and the first cathode layer comprises at least an inorganic oxide nitride, with the first cathode layer is of the same type as the electron transport protective layer.

¹ Matsuo, col. 12, ll. 45-58.

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12. Matsuo is silent to the first cathode layer comprising the alkali metal, and the second cathode layer comprising at least an inorganic oxide nitride.

13. However, it would have been obvious to one having ordinary skill in the art that the time the invention was made to use Applicant's first cathode layer and second cathode layer configuration, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Further, one would be motivated to this configuration for a variety of reasons, manufacturing processes with sensitive requirements and stringent operational requirements.

14. Regarding claim 15, Matsuo discloses that the thickness of the first cathode and electron transport protective layers need to be optimized, however, in column 4, lines 49-54 and column 12, lines 45-58, discloses the first cathode layer is in a range of 0.1 to 10nm and the thickness of the electron transport protective layer is in a range of 3 to 300 nm.

15. Regarding claim 16, Matsuo discloses in column 9, lines 54-62, the anode layer comprises a metal whose thickness is optimized to decrease the sheet resistance value.

16. Although Matsuo is silent to the exact resistance value, one of ordinary skill in the art will be able to discover the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, one would be motivated to such a modification for a variety of reasons, including material availability, and operation methods requiring sensitive parameters.

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17. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Matsuo's device with the anode having a resistance of $1.0 \times 10^{-3} \Omega\text{cm}$ or less.

18. Regarding claim 17, Matsuo discloses in column 18 lines 28-48 that optimization of the mole ration of the electron transporting organic material and the alkali metal in the electron transport protective layer is required, however gives as an example that the ratio is 1:1.

19. Regarding claims 18 and 19, the limitations therein are drawn to processes of manufacturing which are incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation has been considered, but not patentably distinct over Matsuo (see MPEP 2113).

20. Regarding claim 20, Matsuo discloses the substrate is glass.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

22. USPN 4720432 to VanSlyke et al is evidence that a cathode and subsequent layers are known to be transparent to allow light to pass through the cathode.


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23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375.

The examiner can normally be reached on 8:30 - 5:00, M-F.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be "PJM", with a stylized flourish extending from the end.A handwritten signature in black ink, appearing to be "Joseph Williams", written in a cursive style.
JOSEPH WILLIAMS
PRIMARY EXAMINER